

modem 162. The interface 160 may communicate with the remote control unit 202. A basic input/output system (BIOS) memory 154 may also be coupled to the bus 152.

- 5 While the present invention has been described with respect to a limited number of embodiments, those skilled in the art will appreciate numerous modifications and variations therefrom. It is intended that the appended claims cover all such modifications and variations as fall within the true spirit and scope of this present invention.

What is claimed is:

1 1. An article comprising a medium for storing instructions that cause a  
2 processor-based system to:  
3 develop a state vector representing the meaning of a spoken  
4 query; and  
5 form an attribute, value pair for said state vector.

1 2. The article of claim 1 further storing instructions that cause a  
2 processor-based system to develop an utterance vector from a current user  
3 query and a history vector from a previous user query.

1 3. The article of claim 2 further storing instructions that cause a  
2 processor-based system to merge the utterance vector with the history vector to  
3 develop an in-context meaning vector.

1 4. The article of claim 3 further storing instructions that cause a  
2 processor-based system to determine whether the utterance vector includes only  
3 one type of variable, a first or a second of two variable types, and if so, merge  
4 the variable with the history vector to derive said in-context meaning vector.

1 5. The article of claim 4 further storing instructions that cause a  
2 processor-based system to determine whether the utterance vector includes both  
3 the first and second variable types and if so to refrain from using the history  
4 vector to derive said in-context meaning vector.

1           6.    A method comprising:  
2                developing a state vector that represents the meaning of a spoken  
3 query; and  
4                form an attribute, value pair for said state vector.

1           7.    The method of claim 6 wherein using a non-recursive data  
2 structure includes using only non-recursive data structures as said value.

1           8.    The method of claim 6 including refraining from using another state  
2 vector as said value.

1           9.    The method of claim 6 including developing an utterance vector  
2 from a current user query and a history vector from a previous user query.

1           10.   The method of claim 9 including merging the utterance vector with  
2 the history vector to develop in-context meaning vector.

1           11.   The method of claim 10 including determining whether the  
2 utterance vector includes only one of two types of variables, and if so, merging  
3 the variable with the history vector to derive said in-context meaning vector.

1           12.   The method of claim 11 including determining whether the  
2 utterance vector includes both the first and second variable types and if so  
3 refrain from using said history vector to derive said in-context meaning vector.

1           13.    An article comprising a medium for storing instructions that cause a  
2 processor-based system to:  
3                develop a first representation of a current user query;  
4                develop a second representation of a previous user query; and  
5                determine whether the first representation includes only one of two  
6 types of variables, and if so, merge the first representation with the second  
7 representation to form a third representation.

1           14.    The article of claim 13 further storing instructions that cause a  
2 processor-based system to determine whether the first representation includes  
3 only a where variable and in such case use the second representation to form a  
4 third representation and insert the where variable into the second  
5 representation.

1           15.    The article of claim 13 further storing instructions that cause a  
2 processor-based system to determine whether the first representation has only a  
3 select variable, use the second representation to form a third representation and  
4 insert the select variable into the second representation.

1           16.    The article of claim 13 further storing instructions that cause a  
2 processor-based system to determine whether neither a where or a select  
3 variable is contained in the first representation and in such case to make the in-  
4 third representation vector the same as second representation.

1           17.    The article of claim 13 further storing instructions that cause a  
2 processor-based system to determine whether both a where variable and a  
3 select variable are contained in the first representation and if so, use the first  
4 representation to form the third representation and use the third representation  
5 as the second representation.

1           18.    A method comprising:  
2                   developing a first representation from a current user query;  
3                   developing a second representation from a previous user query;  
4           and  
5                   determining whether said first representation includes only one of  
6 two variable types and if so, merging the first representation with the second  
7 representation to form the third representation.

1           19.    The method of claim 18 including determining whether the first  
2 representation includes only a where variable and in such case using the second  
3 representation as the third representation and inserting the where variable into  
4 the second representation.

1           20.    The method of claim 18 including determining whether the first  
2 representation has only a select variable and if so, using the second  
3 representation as the third representation and inserting the select variable into  
4 the second representation.

1           21. The method of claim 18 including determining whether neither a  
2 where or a select variable is contained in the first representation and in such  
3 case, making the third representation the same as the second representation.

1           22. The method of claim 18 including determining whether both a  
2 where variable and a select variable are contained in the first representation and  
3 if so using the first representation to form the third representation and using the  
4 third representation as the second representation.

1           23. A system comprising:  
2 a processor; and  
3 a storage coupled to said processor, said storage storing software  
4 that develops a first representation from a current user query, develops a second  
5 representation from a previous user query, determines whether the first  
6 representation includes only one of two variable types and if so merges the first  
7 representation with the second representation to form a third representation.

1           24. The system of claim 23 wherein said software develops a state  
2 vector representing the meaning of a spoken query, said state vector formed of a  
3 attribute, value pair with a non-recursive data structure as said value.

1           25. The system of claim 23 wherein said software determines whether  
2 the first representation includes only a where variable and in such case, uses the  
3 second representation as the third representation and inserts the where variable  
4 into the second representation.

1           26.    The system of claim 23 including a speech recognizer and a speech  
2 synthesizer communicating with said software.

1           27.    The system of claim 26 including a graphical user interface stored  
2 in said storage and synchronized to said software.

1           28.    The system of claim 23 including an electronic programming guide  
2 application, said software creating a conversational speech responsive system.

1           29.    The system of claim 23 wherein said system is a set-top box  
2 controlling a television receiver and implementing an electronic programming  
3 guide.

1           30.    The system of claim 29 including a remote control unit coupled to  
2 said set-top box through a wireless interface.